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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Ramabadran S. Raghavan et al.

Serial No.: 10/628,660

Filed: July 28, 2003

For: INTERNET DISTRIBUTED ACCESS
NETWORK ARCHITECTURE

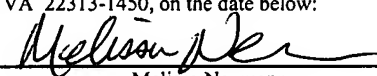
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Group Art Unit: 2617

Examiner: Ajibade Akonal, Olumide

Atty. Docket: LUCW:0003/FLE
KANSAL 2-6

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APPEAL BRIEF PURSUANT TO 37 C.F.R. §§ 41.31 AND 41.37

This Appeal Brief is being filed in furtherance to the Notice of Appeal mailed on May 24, 2007, and received by the Patent Office on May 29, 2007.

The Commissioner is authorized to charge the requisite fee of \$500.00 for the appeal, a \$120.00 fee for a one-month extension of time, and any additional fees which may be necessary to advance prosecution of the present application, to the credit card listed on the attached PTO-2038. However, if the PTO-2038 is missing, if the amount listed thereon is insufficient, or if the amount is unable to be charged to the credit card for any other reason, the commissioner is authorized to charge Deposit Account No. 06-1315, Order No. LUCW:0003/FLE (KANSAL 2-6).

1. **REAL PARTY IN INTEREST**

The real party in interest is Lucent Technologies, Inc., the Assignee of the above-referenced application, recorded at reel 014342, frame 0363, and dated July 28, 2003.

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Lucent Technologies, Inc. recently merged with Alcatel S.A., so Alcatel-Lucent will be directly affected by the Board's decision in the pending appeal.

2. **RELATED APPEALS AND INTERFERENCES**

Appellants are unaware of any other appeals or interferences related to this Appeal. The undersigned is Appellants' legal representative in this Appeal.

3. **STATUS OF CLAIMS**

Claims 1-22, 24 and 25 are currently pending and under final rejection and, thus, are the subject of this Appeal.

4. **STATUS OF AMENDMENTS**

As the instant claims have not been amended at any time, there are no outstanding amendments to be considered by the Board.

5. **SUMMARY OF CLAIMED SUBJECT MATTER**

The present invention relates generally to wireless communications systems and, more particularly, to a wireless communications system that utilizes the Internet for communication between a transceiver unit and an access network unit.

The Application contains three (3) independent claims, namely, claims 1, 17, and 20, all of which are the subject of this Appeal. The subject matter of these claims is summarized below.

With regard to the aspect of the invention set forth in independent claim 1, discussions of the recited features of claim 1 can be found at least in the below cited locations of the specification and drawings. By way of example, an embodiment in accordance with claim 1 provides a "transceiver unit (*e.g.*, 14) for use with a wireless communication system (*e.g.*, 30)." *See, e.g.*, Application, page 8, line 17 to page 9, line 6; Figs. 1-2. The transceiver unit (*e.g.*, 14) comprises "an antenna configured to receive a

wireless transmission from a mobile device.” *See id.* at page 9, lines 8-22; Fig. 2. The transceiver (*e.g.*, 14) further comprises “a communication interface, coupled to the antenna, and configured to facilitate communication between the transceiver (*e.g.*, 14) and an access network unit (*e.g.*, 12) over an undedicated public network (*e.g.*, 16), wherein the communication between the transceiver (*e.g.*, 14) and the access network unit (*e.g.*, 12) is independent of a dedicated connection.” *See id.* at page 10, lines 5 to page 11, line 8; Fig. 2.

With regard to the aspect of the invention set forth in independent claim 17, discussions of the recited features of claim 17 can be found at least in the below cited locations of the specification and drawings. By way of example, an embodiment in accordance with claim 17 provides a “tangible medium having a software program for use in a wireless communications system (*e.g.*, 30).” *See, e.g.*, Application, p. 6, lines 15-17. The software program comprising “at least one routine for facilitating communication of information over an undedicated public network (*e.g.*, 16) between at least one base station (*e.g.*, 14), which is adapted to communicate over an air interface with portable communications devices, and a controller (*e.g.*, 12), which is adapted to process information communication with the at least one base station (*e.g.*, 14), wherein the controller (*e.g.*, 12) is located between the base station (*e.g.*, 14) and a service network (*e.g.*, 32).” *Id.* at Figs. 1-3; p. 6, lines 17-21; p. 14, lines 1-12.

With regard to the aspect of the invention set forth in independent claim 20, discussions of the recited features of claim 20 can be found at least in the below cited locations of the specification and drawings. By way of example, an embodiment in accordance with claim 20 provides a “method of producing an information packet in a wireless communications system (*e.g.*, 30).” *See, e.g.*, Application, p. 6, lines 23-24; p. 13, lines 16-18. The method comprises the act of “receiving information from a transceiver unit via an air interface.” *Id.* at Fig. 2; p. 7, lines 1-3. The method also comprises the step of “processing the information to form an information packet suitable for transmission to an access network unit (*e.g.*, 12) via an undedicated public network

(e.g., 16).” *Id.* at Fig. 2; p. 7, lines 1-3; p. 10, line 23 through p. 13, line 7. Further, the method comprises the act of “transmitting the information packet to the access network unit (e.g., 12) independent of a dedicated connection.” *Id.*

Some of the benefits of the invention, as recited in these claims, include providing network deployment options for a network operator and the ability to rapidly and inexpensively deploy or expand the network. *See id.* page 10, lines 9-21. Specifically, as set forth in the Application:

With a network architecture based on these techniques, there are several network deployment options available for an operator. For example, the access network unit 12 may be located at a common site or location, and the transceiver units 14A-E may be distributed across the coverage area specific to that particular operator. Because the transceiver units 14A-E may be located in any area in which access to the public network is possible, the installation of locations are virtually endless. Furthermore, with no capital expenditures for purchasing and running dedicated lines, such as fiber optic cables, to each transceiver unit 14A-E, a significant cost savings may be realized. In addition, because running such dedicated lines is both labor and time intensive, new cell sites may be installed in much less time, e.g., a few weeks as opposed to several months. Of course, because the access network units 12 may be located with other network elements, significant cost savings may be realized in this regard also.

See id. page 10, lines 9-21. This is a clear difference and distinction from the prior art, as discussed below.

6. **GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

First Ground of Rejection for Review on Appeal:

Appellants respectfully urge the Board to review and reverse the Examiner’s first ground of rejection in which the Examiner rejected claims 1-5, 8-11, 17-21, 24 and 25 under 35 U.S.C. § 103(a) as being unpatentable over Chen et al. (U.S. Publication No.

2003/0211859, “the Chen reference”) in view of Hata et al. (U.S. Publication No. 2002/0098845, “the Hata reference”).

Second Ground of Rejection for Review on Appeal:

Appellants respectfully urge the Board to review and reverse the Examiner’s second ground of rejection in which the Examiner rejected claims 6 and 7 under 35 U.S.C. § 103(a) as being unpatentable over the Chen reference in view of the Hata reference, and further in view of Kowalski et al. (U.S. Patent No. 6,631,410, “the Kowalski reference”).

Third Ground of Rejection for Review on Appeal:

Appellants respectfully urge the Board to review and reverse the Examiner’s second ground of rejection in which the Examiner rejected claims 12-14 under 35 U.S.C. § 103(a) as being unpatentable over the Chen reference in view of the Hata reference, and further in view of Eilers et al., *Reradiation (Echo) Analysis of a Tapered Tower Section Supporting A Side-Mounted DTV Broadcast Antenna and Corresponding Azimuth Pattern* (“the Eilers reference”).

Fourth Ground of Rejection for Review on Appeal:

Appellants respectfully urge the Board to review and reverse the Examiner’s second ground of rejection in which the Examiner rejected claims 15 and 16 under 35 U.S.C. § 103(a) as being unpatentable over the Chen reference in view of the Hata reference, and further in view of Ketonen (U.S. Patent No. 6,104,917, “the Ketonen reference”).

Fifth Ground of Rejection for Review on Appeal:

Appellants respectfully urge the Board to review and reverse the Examiner’s second ground of rejection in which the Examiner rejected claims 22 under 35 U.S.C. § 103(a) as being unpatentable over the Chen reference in view of the Hata reference, and further in view of Onweller et al. (U.S. Patent No. 6,931,102, “the Onweller reference”).

7. **ARGUMENT**

As discussed in detail below, the Examiner has improperly rejected the pending claims. Further, the Examiner has misapplied long-standing and binding legal precedents and principles in rejecting the claims under Section 103. Accordingly, Appellants respectfully request full and favorable consideration by the Board, as Appellants believe that claims 1-22, 24 and 25 are currently in condition for allowance.

A. **Ground of Rejection No. 1:**

As stated above, the Examiner rejected claims 1-5, 8-11, 17-21, 24 and 25 under 35 U.S.C. § 103(a) as being unpatentable over the Chen reference in view of the Hata reference. With respect to each of the independent claims 1, 17, and 20, the Examiner admitted that the Chen reference failed to disclose all the elements set forth in the claims, but alleged that the Hata reference obviated the deficiencies of the Chen reference.

Specifically, with respect to claims 1, 17 and 20, the Examiner stated:

Regarding claim 1, Chen et al discloses transceiver unit (base station 204, with transmit unit 268 and receive unit 254, see fig. 2, p. 2 [0025], p. 3, [0026]) for use with a wireless communication system (group communication system 100, see fig. 1, p. 2, [0017]), the transceiver unit comprising: an antenna configured to receive a wireless transmission (antenna 250, see fig. 2, p. 2, [0025]) from a mobile device (group communication devices 104, see fig. 1, p. 2, [0018]) a communication interface (base station controller, BSC 110, see fig. 1, p. 2, [0019]) to facilitate communication between the transceiver and an access network unit (group call server performs call initiations and interacts with the communication devices, see p. 2, [0019]) to facilitate communication between the transceiver and an access network unit (group call server performs call initiations and interacts with the communications devices, see p. 2, [0019], p. 3 [0029]) over an undedicated public network IP protocol network 108, see p. 2, [0019]).

Chen fails to disclose wherein the communication between the transceiver unit and the access network unit is independent of a dedicated network.

In the same field of endeavor, Hata discloses wherein the communication between the transceiver unit (wireless bases station 104, see fig. 1, p. 3, [0040]) and the access network unit (server 102, see fig. 1, p.3, [0040]) is independent of a dedicated network (mobile terminal 101 is coupled to server 102 via the wireless base station 104 and the internet, see fig. 1, p. 3, [0040]).

It would therefore have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Hata into the system of Chen for the benefit of providing a means for a mobile device to exchange data with a server.

[...]

Regarding claim 17, Chen et al further teaches a tangible medium (general purpose processor, DSP, ASIC, FPGA or programmable logic device, see p. 6, [0059]) having a software program logic block, modules, and algorithm steps described can be implemented as computer software) for use in a wireless communication system (group communication system 100, see p. 2, [0017]), the software program comprising: at least one routine for facilitating communication of information (call set-up process, see fig. 6, p. 4, [0039]) over an undedicated public network (IP network 108, see fig. 1, p. 2, [0019]) between at least one base station (base station 204 with a transceiver and receiver unit, see fig. 2, p. 2, [0025]), which is adapted to communicate over an air interface with portable communications devices (voice and /or data is exchanged between base station 204 and mobile station 206 over via an air interface, see p. 2, [0022]), and a controller (base station controller, BSC 110, see fig. 1, p. 2, [0019]), which is adapted to process information communicated with the at least one base station, wherein the controller is located between the base station and a service network (mobile station 206 with transmit and receive unit, and call set-up process in which mobile station communication device sends a group call request 604 to group call server in order

to set up a group call, see figs. 1, 2 and 6, p. 2, [0019], [0023], p. 4, [0039]).

Chen fails to disclose wherein the software program comprises at least one routine for facilitating communication of information over an undedicated public network.

In the same field of endeavor, Hata discloses wherein the software program comprises at least one routine for facilitating communication of information over and undedicated public network (mobile terminal 101 is coupled to server 102 via the wireless base station 104 and the internet, see fig. 1, p. 3, [0040]).

It would therefore have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Hata into the system of Chen for the benefit of providing a means for a mobile device to exchange data with a server.

[...]

Regarding claim 20, Chen et al discloses a method of producing an information packet in a wireless communication system, the method comprising the acts of: receiving information from a transceiver unit via an air interface (mobile station 206 communication with base station 204 over an air interface, see p. 2, [0022]); processing the information to form an information packet (base station demodulator 256 processes received signal and processor 258 decodes the symbols to recover the data and messages, see fig. 2, p. 2, [0025]) suitable for transmission to an access network via an undedicated public network (BSC sends media 622 that it has received from communication device to group call server, see fig. 6, p. 5, [0048]).

Chen fails to disclose transmitting the information packet to a controller independent of a dedicated connection.

In the same field of endeavor, Hata discloses transmitting the information packet to the access network

unit (server 102, see fig. 1, p. 3, [0040]) independent of a dedicated connection (mobile terminal 101 transmitting a shop number to a server via the wireless base station and the internet, see fig. 4, p. 4, [0047]).

It would therefore have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Hata into the system of Chen for the benefit of providing a means for a mobile device to exchange data with a server.

Office Action, pp. 2-3, 5-6 and 7-8. Applicants respectfully traverse the rejection.

1. **Judicial precedent regarding a *prima facie* obviousness rejection.**

The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (B.P.A.I. 1979). The pending claims must be given an interpretation that is reasonable and consistent with the *specification*. See *In re Prater*, 415 F.2d 1393, 1404-05, 162 U.S.P.Q. 541, 550-51 (C.C.P.A. 1969) (emphasis added); see also *In re Morris*, 127 F.3d 1048, 1054-55, 44 U.S.P.Q.2d 1023, 1027-28 (Fed. Cir. 1997); see also M.P.E.P. §§ 608.01(o) and 2111. Indeed, the specification is “the primary basis for construing the claims.” See *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (*en banc*). One should rely *heavily* on the written description for guidance as to the meaning of the claims. See *id.*

Additionally, interpretation of the claims must also be consistent with the interpretation that *one of ordinary skill in the art* would reach. See *In re Cortright*, 165 F.3d 1353, 1359, 49 U.S.P.Q.2d 1464, 1468 (Fed. Cir. 1999); M.P.E.P. § 2111. “The inquiry into how a person of ordinary skill in the art understands a claim term provides an objective baseline from which to begin claim interpretation.” See *Collegenet, Inc. v. ApplyYourself, Inc.*, 418 F.3d 1225, 75 U.S.P.Q.2d 1733, 1738 (Fed. Cir. 2005) (quoting *Phillips v. AWH Corp.*, 75 U.S.P.Q.2d 1321, 1326). The Federal Circuit has made clear

that derivation of a claim term must be based on “usage in the ordinary and accustomed meaning of the words amongst artisans of ordinary skill in the relevant art.” *See id.*

Moreover, in establishing a *prima facie* case for obviousness, “the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long-felt but unresolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.” *KSR Int’l Co. v. Teleflex, Inc.* No. 04-1350, slip op. at 2 (U.S. April 30, 2007) (quoting *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966)). Additionally, it is often necessary “to look to interrelated teachings of multiple patents, the effects of demands known to the design community or present in the market place; and the background knowledge possessed by a person having ordinary skill in the art.” *Id.* at 14. This analysis should be made explicit. *Id.* (citing *In re Khan*, 441 F.3d 977, 988 (Fed. Cir. 2006)) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”).

Furthermore, a claim having several elements is *not* proved obvious merely by demonstrating that each of its elements was known in the prior art. *Id.* In this regard, the *KSR* court stated that “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does...because inventions in most, if not all, instance rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.” *Id.* at 14-15. As such, the obviousness inquiry does not hinge on demonstrating that elements were known in the

art. Rather, the obviousness inquiry focuses on whether the claimed subject matter would have been obvious to persons having ordinary skill in the art in view of the demands and practices of the design community at the time of filing of the application. *See id.*

2. **The Chen and Hata References Cannot Support a *Prima Facie* Case for Obviousness under Section 103**

Applicants respectfully assert that the Chen reference and the Hata reference, taken alone or in hypothetical combination, fail to present a *prima facie* case of obviousness under Section 103 with respect to independent claims 1, 17, and 20.

The instant application is directed to “wireless communication systems, sometimes referred to as mobile telephone systems or cellular telephone systems.” Application, p. 2, lines 17-20. In a cellular telephone system, mobile devices, such as wireless telephones, communicate over an air interface with an antenna of a transceiver unit or RF subsystem. *See Id.* at p. 4, line 24 through p. 5, line 3. In a distributed system, a base band subsystem serves several transceiver units which are remotely located. *Id.* at p. 5, lines 7-15. In a conventional distributed system, dedicated lines are provided for communication between the multiple transceiver units and the single base band subsystem. *Id.* at p. 5, lines 17-19. However, the present invention provides techniques to utilize undedicated public networks, such as the Internet, to replace the dedicated connections between elements of a distributed network.

In particular, the instant application provides an access network unit and a protocol for communication between an access network unit and the transceiver unit over an undedicated public network. *See* Application, p. 8 line 17 through p. 9, line 6. The access network unit includes an access network controller and a transceiver server. *Id.* The access network controller provides call processing and control functions for a particular access technology between the access network controller and the transceiver server, as well as providing protocol connectivity with other network elements. *Id.* at p.

12, line 21 through p. 13, line 2. The transceiver server provides server functionality to identify the correct transceiver unit and to provide connectivity to the various distributed transceiver units via the public network. *Id.* at p. 8, line 23 through p. 9, line 3. Both the transceiver server and the transceiver unit possess the capability to meet the connectivity requirements to route information, i.e., voice and/or data, via a public network. *Id.* at p. 9, lines 5-9. The protocol for the transceiver unit may be designed so that the transceiver unit is able to convert baseband information received from the access network controller to the appropriate RF signals including modulation, up conversion, transmit amplification and filtering, for example. *Id.* at p. 11, lines 15-21.

With the foregoing discussion giving context, independent claim 1 recites a “transceiver unit comprising ... a communication interface ... to facilitate communication *between the transceiver and an access network unit over an undedicated public network*, wherein the communication between the transceiver and the access network unit is independent of a dedicated connection.” (Emphasis added). Independent claim 17 recites “at least one routine for facilitating communication of information over *an undedicated public network between at least one base station...and a controller...located between the base station and a service network.*” (Emphasis added). Independent claim 20 recites “receiving information from a transceiver unit via an air interface...processing the information to form an information packet suitable for transmission to an *access network unit via an undedicated public network*; and transmitting the information packet to the *access network unit* independent of a dedicated connection.” (Emphasis added).

In contrast, neither the Chen reference nor the Hata reference disclose, teach or suggest all the features set forth in the claims and described in detail in the specification of the instant application. The Chen reference is directed to a system for supporting multicasting for streaming media to a group of target communication devices. *See* Chen, para. 1. As conceded by the Examiner, the Chen reference fails to disclose the

communication between the transceiver unit and the access network unit is independent of a dedicated network, as set forth in claim 1. (Office Action, page 3). Additionally, the Examiner conceded that the Chen reference failed to disclose a software program that comprises at least one routine for facilitating communication of information over an undedicated public network, as set forth in claim 17, and transmitting the information packet to a controller independent of a dedicated connection, as set forth in claim 20. *Id.* at pages 6 and 7.

Applicants agree with the Examiner that the Chen reference does not disclose all the elements of the independent claims 1, 17 and 20. However, Applicants respectfully disagree with the Examiner's assertion the Hata reference cures the admitted deficiencies of the Chen reference. Specifically, Applicants respectfully assert that the Hata reference does not disclose communication between the transceiver unit and the access network unit is independent of a dedicated network, as set forth in claim 1, a software program comprising at least one routine for facilitating communication of information over an undedicated public network, as set forth in claim 17, or transmitting an information packet to an access network unit via an undedicated public network, as set forth in claim 20.

Applicants respectfully assert that the Hata reference does not disclose communication between a transceiver unit and an access network unit, or controller, independent of a dedicated network, as set forth in claims 1, 17 and 20. In the rejection, the Examiner analogized the wireless base station 104 of the Hata reference with the "transceiver unit" of claims 1, 17 and 20. Additionally, the Examiner analogized the server 102 of the Hata reference with the "access network unit" of claims 1 and 20, and the "controller" of claim 17. Office Action, p. 4, 6 and 7. Applicants respectfully assert, however, that the Hata reference does not disclose anything that can reasonably be

considered the equivalent of the access network unit, or the transceiver unit, as described and claimed in the instant application.

As a preliminary matter, it should be noted that while the Hata reference does disclose a system that implements wireless communications, the system is fundamentally different from the wireless systems to which the instant application is directed. In particular, the Hata reference apparently is directed to a system that provides wireless internet access via wireless base stations, such as wireless base station 104. *See* Hata, FIG. 7; paragraphs 7-9. As is known in the art, such systems are typically based on an IEEE 802.11 wireless standard for wireless local area networks to allow for wireless internet access. In contrast, as stated above, the instant application is directed to “wireless communication systems, sometimes referred to as mobile telephone systems or cellular telephone systems.” Application, p. 2, lines 17-20. As discussed in detail below, the differences between a wireless local area network and a cellular telephone system are extensive. As such, the structures and functions of the structures discussed in the Hata reference cannot reasonably be equated with those of the instant application except at high levels of abstraction, *i.e.* a wireless communications.

The Hata reference discloses a system having a mobile terminal 101 which communicates with a store server 102 via a wireless base station 104. *See* FIG. 1; paragraph [0048]. A user of the mobile terminal 101 may receive discount services from a cash register 103 because of the communications with the server 102. *See* FIG. 1; paragraph [0048]. Accordingly, much of the Hata reference is dedicated to explaining the operation and structure of particular embodiments of the mobile terminal 101. *See* paragraphs [0042]-[0054]. There is little discussion regarding the server 102 or the wireless base station 104. It seems clear, however, that the server 102 is owned and operated by the service entity giving discounts to users of the mobile terminal 101. *See* FIGS. 1 and 7; paragraphs [0005]-[0007]. Additionally, the server 102 functions as a

normal server and not as an access network unit, as set forth in claim 1. *See id.* In particular, there is nothing in the Hata reference with respect to the server 102 providing call processing and control functions. The server 102 in Hata is an endpoint and source of data and is only described as exchanging data with the mobile terminal 101 via a wireless base station 104. *See, e.g., id.* at paragraph [0044]. Thus, one of ordinary skill in the art would not consider the server 102 in Hata to be the equivalent of the access network unit of the instant application, which provides call processing and control functionality.

Additionally, Applicants respectfully assert that the wireless base station 104 of the Hata reference cannot reasonably be analogized with the transceiver unit of the instant application. In particular, Applicants respectfully assert that the Hata's wireless base station 104 is more closely analogous to a mobile switching center of a wireless communication system because the wireless base station 104 routes the communicated data between the server 102 and the mobile terminal 101. *See Hata*, FIG. 1. As described in the background section of the instant application, a "mobile switching center is the switch that serves the wireless system, and it performs the function of switching calls to the appropriate destination." Application, p. 3, lines 8-10. In the Hata reference, the wireless base station 104 is the only structure besides the mobile terminal 101 which provides any obvious routing functionality. *See Hata* at FIG. 1. Furthermore, because this functionality is attributed to the wireless base station 104 and the wireless base station wirelessly communicates with the mobile terminal 101, the wireless base station 104 would necessarily include a transceiver for wireless communications and switching technology to properly route communications between the server 102 and the mobile terminal 101. In other words, the Hata reference necessarily discloses a dedicated communication path between the transceiver unit and the mobile switching center (internal to the wireless base station 104). Moreover, in contrast to the system set forth in the instant application, the Hata reference clearly does not disclose a distributed system. Therefore, the Hata reference does not disclose, teach or suggest communication between

a transceiver unit and an access network unit independent of a dedicated network as set forth in claims 1 and 17. Rather, the only communication via an undedicated network in the Hata reference is the communication between the wireless base station 104 and the server 102 and, as discussed above, the server cannot reasonably be considered an access network unit.

Accordingly, for at least these reasons, Applicants respectfully assert that the Hata reference fails to overcome the admitted deficiencies of the Chen reference with respect to claims 1, 17 and 20. Accordingly, Applicants respectfully request withdrawal of the rejection under Section 103 of claims 1, 17 and 20, as well as allowance of the independent claims and all claims depending therefrom.

In addition to the reasons set forth above, Applicants respectfully assert that the Chen and Hata references do not disclose, teach or suggest processing information into the form of a “packet” suitable for transmission via a public network *after* the information is received by a transceiver via an air interface, as set forth in claim 20. In other words, a “packet” is *not* transmitted over the air interface in claim 20. In sharp contrast, the Chen reference repeatedly refers to the “packet” as being transmitted over the air interface 208 between the base station 204 and the mobile station 206. *See* Chen, paragraphs 22-26. Indeed, as discussed previously, because the mobile units 104/206 are communication devices that have an IP address, the “packets” *must* be transmitted over the air interface 208 in the Chen reference, otherwise the system described in the Chen reference would not operate. Therefore, the Chen reference clearly does not disclose the subject matter set forth in independent claim 20.

The Hata reference does not overcome this deficiency of the Chen reference. Specifically, as discussed above, the Hata reference only discloses communication between a server 102 and a mobile terminal 101 via wireless Internet access. *See*

paragraph [0007]. The communication is facilitated by a wireless base station 104, however, no detail is given as to what form information received from the mobile device 101 arrives. As mentioned above, the wireless base station 104 of the Hata reference appears to be operating an IEEE 802.11 standard which communicates packets wirelessly between a base station and a computing device. As such, it appears that the wireless base station 104 receives data in packet form from the mobile terminal 101. Additionally, there is no disclosure in the Hata reference, of which the Applicants are aware, of processing the signal in order to transmit the information via the Internet. As such, the Hata reference fails to overcome the deficiencies of the Chen reference in this regard, and the Chen reference and the Hata reference, taken alone or in hypothetical combination, do not disclose all the elements of claim 20.

Therefore, for at least the reasons set forth above, the Hata reference does not disclose communication between the transceiver and an access network unit over an undedicated public network, as set forth in claim 1; does not disclose communication over an undedicated public network between a base station and a controller, as set forth in claim 17; and does not disclose transmitting an information packet to an access network unit via an undedicated public network, as set forth in claim 20.

As such, for at least the reasons set forth above, the Chen reference and the Hata reference, taken alone or in hypothetical combination fail to disclose, teach or even suggest every feature of claims 1, 17 and 20. Furthermore, Applicants respectfully assert that the differences between what is disclosed in the Chen and Hata references and the independent claims of the instant application would be non-obvious to one of ordinary skill in the art. Accordingly, Applicants respectfully request withdrawal of the pending Section 103 rejection and allowance of claims 1, 17 and 20, as well as all claims depending therefrom.

3. Several dependent claims are directed to subject matter that is non-obvious under Section 103 over the cited references.

Applicants respectfully assert that several dependent claims recite non-obvious subject matter. In particular, claim 4 sets forth a transceiver unit wherein “at least one protocol layer converts information received from the access network unit over the public network to RF signals to be communicated by the transceiver unit over an air interface and claim 5 sets forth a transceiver unit “wherein the at least one protocol layer converts RF signals received by the transceiver unit over an air interface to information suitable for transmission over the public network to the access network controller.” In contrast, neither the Chen nor Hata references discloses a transceiver unit that converts any received or transmitted signal.

As discussed above, the Chen reference repeatedly refers to the “packet” as being transmitted over the air interface 208 between the base station 204 and the mobile station 206 and through the IP network to a group call server 102. *See* Chen, paragraphs 22-26. Because the mobile units 104/206 are communication devices that have an IP address, the “packets” *must* be transmitted over the air interface 208 in the Chen reference, otherwise the system described in the Chen reference would not operate. As such, there is no transceiver unit that converts a received signal for transmission or communication. Similarly, the Hata reference does not disclose a transceiver converting signals into information suitable for transmission of a public network or to be communicated over an air interface. Indeed, Applicants assert that the mobile terminal 101 transmits signals in a format already suitable for transmission over the Internet and the wireless base station 104 simply routes the signals from the mobile terminal 101 to the Internet. As discussed above, the wireless base station 104 of the Hata reference appears to be IEEE 802.11 standard which transmits and receives packets. As such, the Hata reference does not disclose a transceiver unit which converts signals to be communicated over an air interface, as set forth in claim 4, or to be suitable to transmission over the public network as set forth in claim 5. Accordingly, Applicants respectfully request, for unique and

nonobvious subject matter set forth in claims 4 and 5, that the Section 103 rejection of claims 4 and 5 be withdrawn.

B. Ground of Rejection Number 2

As mentioned above, the Examiner rejected claims 6 and 7 under 35 U.S.C. § 103(a) as being unpatentable over the Chen reference in view of the Hata reference, and further in view of Kowalski et al. (U.S. Patent No. 6,631,410, “the Kowalski reference”). Applicants respectfully submit that claims 6 and 7 are allowable based on their dependencies on claim 1, because the Kowalski reference does not cure the deficiencies described above with regard to the Chen and Hata references. Specifically, the Kolowalski reference discloses a system for synchronizing a multimedia content stream signal. *See* Kolowalski, abstract. However, the Applicants are unaware of, and the Examiner has not cited to, any portion of the Kolowaski reference that discloses communication *between the transceiver and an access network unit over an undedicated public network*, wherein the communication between the transceiver and the access network unit is independent of a dedicated connection, as set forth in claim 1. As such, the Kolowaski reference does not overcome the deficiencies of the Chen and Hata reference with respect to claim 1. For at least this reason, claims 6 and 7 are believed to be allowable over the cited references. Thus, Applicants respectfully request withdrawal of the rejection of claims 6 and 7.

C. Ground of Rejection Number 3

As mentioned above, the Examiner rejected claims 12-14 under 35 U.S.C. § 103(a) as being unpatentable over the Chen reference in view of the Hata reference, and further in view of Eilers et al., *Reradiation (Echo) Analysis of a Tapered Tower Section Supporting A Side-Mounted DTV Broadcast Antenna and Corresponding Azimuth Pattern* (“the Eilers reference”). Applicants respectfully submit that claims 12-14 are allowable based on their dependencies on claim 1, because the Eilers reference does not cure the deficiencies described above with regard to the Chen and Hata references. Specifically, the Eilers reference is directed to re-radiation of signals from anon-vertical

obstruction in a wireless communication system. *See* Eilers, abstract. However, the Applicants are unaware of, and the Examiner has not cited to, any portion of the Eilers reference that discloses communication *between the transceiver and an access network unit over an undedicated public network*, wherein the communication between the transceiver and the access network unit is independent of a dedicated connection, as set forth in claim 1. As such, the Eilers reference does not overcome the deficiencies of the Chen and Hata reference with respect to claim 1. For at least this reason, claims 12-14 are believed to be allowable over the cited references. Thus, Applicants respectfully request withdrawal of the rejection of claims 12-14.

D. Ground of Rejection Number 4

As mentioned above, the Examiner rejected claims 15 and 16 under 35 U.S.C. § 103(a) as being unpatentable over the Chen reference in view of the Hata reference, and further in view of Ketonen (U.S. Patent No. 6,104,917, “the Ketonen reference”). Applicants respectfully submit that claims 15 and 16 are allowable based on their dependencies on claim 1, because the Ketonen reference does not cure the deficiencies described above with regard to the Chen and Hata references. Specifically, the Ketonen reference discloses an apparatus for maintaining temperatures a base station cabinet above a minimum level. *See* Ketonen, abstract. However, the Applicants are unaware of, and the Examiner has not cited to, any portion of the Ketonen reference that discloses communication *between the transceiver and an access network unit over an undedicated public network*, wherein the communication between the transceiver and the access network unit is independent of a dedicated connection, as set forth in claim 1. As such, the Ketonen reference does not overcome the deficiencies of the Chen and Hata reference with respect to claim 1. For at least this reason, claims 15 and 16 are believed to be allowable over the cited references. Thus, Applicants respectfully request withdrawal of the rejection of claims 15 and 16.

E. **Ground of Rejection Number 5**

As mentioned above, the Examiner's second ground of rejection in which the Examiner rejected claims 22 under 35 U.S.C. § 103(a) as being unpatentable over the Chen reference in view of the Hata reference, and further in view of Onweller et al. (U.S. Patent No. 6,931,102, "the Onweller reference"). Applicants respectfully submit that claim 22 is allowable based on its dependency on claim 1, because the Onweller reference does not cure the deficiencies described above with regard to the Chen and Hata references. the Onweller reference discloses a system communicating information between a central office technician and network element monitoring personnel. *See* Onweller, abstract. However, the Applicants are unaware of, and the Examiner has not cited to, any portion of the Onweller reference that discloses communication *between the transceiver and an access network unit over an undedicated public network*, wherein the communication between the transceiver and the access network unit is independent of a dedicated connection, as set forth in claim 1. As such, the Onweller reference does not overcome the deficiencies of the Chen and Hata reference with respect to claim 1. For at least this reason, claim 22 is believed to be allowable over the cited references. Thus, Applicants respectfully request withdrawal of the rejection of claim 22.

Conclusion

Appellants respectfully submit that all pending claims are in condition for allowance. However, if the Examiner or Board wishes to resolve any other issues by way of a telephone conference, the Examiner or Board is kindly invited to contact the undersigned attorney at the telephone number indicated below.

Respectfully submitted,

Date: August 29, 2007



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8. **APPENDIX OF CLAIMS ON APPEAL**

Listing of Claims:

1. (previously presented) A transceiver unit for use with a wireless communications system, the transceiver unit comprising:

an antenna configured to receive a wireless transmission from a mobile device;

and

a communication interface, coupled to the antenna, and configured to facilitate communication between the transceiver and an access network unit over an undedicated public network, wherein the communication between the transceiver and the access network unit is independent of a dedicated connection.
2. (original) The transceiver unit, as set forth in claim 1, wherein the communication interface comprises at least one protocol layer.
3. (original) The transceiver unit, as set forth in claim 2, wherein the at least one protocol layer maintains an IP address of the access network unit.
4. (original) The transceiver unit, as set forth in claim 2, wherein the at least one protocol layer converts information received from the access network unit over the

public network to RF signals to be communicated by the transceiver unit over an air interface.

5. (original) The transceiver unit, as set forth in claim 2, wherein the at least one protocol layer converts RF signals received by the transceiver unit over an air interface to information suitable for transmission over the public network to the access network controller.

6. (original) The transceiver unit, as set forth in claim 2, wherein the at least one protocol layer provides security information to the access network unit to facilitate secure communication over the public network.

7. (original) The transceiver unit, as set forth in claim 2, wherein the at least one protocol layer negotiates quality of service for communications with the access network unit over the public network.

8. (original) The transceiver unit, as set forth in claim 2, wherein the at least one protocol layer encapsulates higher layer protocol information to facilitate protocol requirements of the public network.

9. (original) The transceiver unit, as set forth in claim 2, wherein the at least one protocol layer comprises at least one technology dependent protocol layer.

10. (original) The transceiver unit, as set forth in claim 1, wherein the public network comprises the internet.

11. (original) The transceiver unit, as set forth in claim 1, comprising at least one antenna to facilitate communications between the transceiver unit and at least one portable communications device over an air interface.

12. (original) The transceiver unit, as set forth in claim 11, comprising a structure on which the at least one antenna resides.

13. (original) The transceiver unit, as set forth in claim 12, wherein the structure comprises a tower.

14. (original) The transceiver unit, as set forth in claim 12, wherein the structure comprises a building.

15. (original) The transceiver unit, as set forth in claim 1, comprising a structure for housing the communication interface.

16. (original) The transceiver unit, as set forth in claim 15, wherein the structure comprises a cabinet.

17. (previously presented) A tangible medium having a software program for use in a wireless communications system, the software program comprising:

at least one routine for facilitating communication of information over an undedicated public network between at least one base station, which is adapted to communicate over an air interface with portable communications devices, and a controller, which is adapted to process information communicated with the at least one base station, wherein the controller is located between the base station and a service network.

18. (original) The tangible medium, as set forth in claim 17, wherein the at least one routine facilitates communication information over the internet.

19. (original) The tangible medium, as set forth in claim 17, wherein the at least one routine comprises at least one protocol layer adapted to facilitate communication over the public network.

20. (previously presented) A method of producing an information packet in a wireless communications system, the method comprising the acts of:

receiving information from a transceiver unit via an air interface;

processing the information to form an information packet suitable for
transmission to an access network unit via an undedicated public network;
and
transmitting the information packet to the access network unit independent of a
dedicated connection.

21. (original) The method, as set forth in claim 20, wherein the public network
comprises the internet.

22. (previously presented) The transceiver unit, as set forth in claim 1, wherein
the transceiver is assigned an IP address to facilitate communications with the access
network unit over the undedicated public network.

24. (previously presented) The method, as set forth in claim 20, wherein
transmitting the information packet to the access network unit comprises transmitting the
information packet to a base station controller.

25. (previously presented) The method, as set forth in claim 20,
wherein transmitting the information packet comprises transmitting the information
packet using one or more Tu-TxrS protocol layers.

9. **EVIDENCE APPENDIX**

None.

10. **RELATED PROCEEDINGS APPENDIX**

None.